

Waters of

LIFE

Waters of LIFE Advisor Training

Module 4 - Completing Runoff Risk Assessment



Co-funded by
the European Union



An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Overview



1. What is a run-off risk assessment?
2. Our approach
3. Pre-assessment Desk Study
4. Exercise
5. Farm Assessment Advisor's Role
6. App
7. Exercise
8. Flow pathways from yards
9. Farmyard Assessment
10. Follow on supports



What is the purpose of a runoff risk assessment?



Example of right action in the right place.

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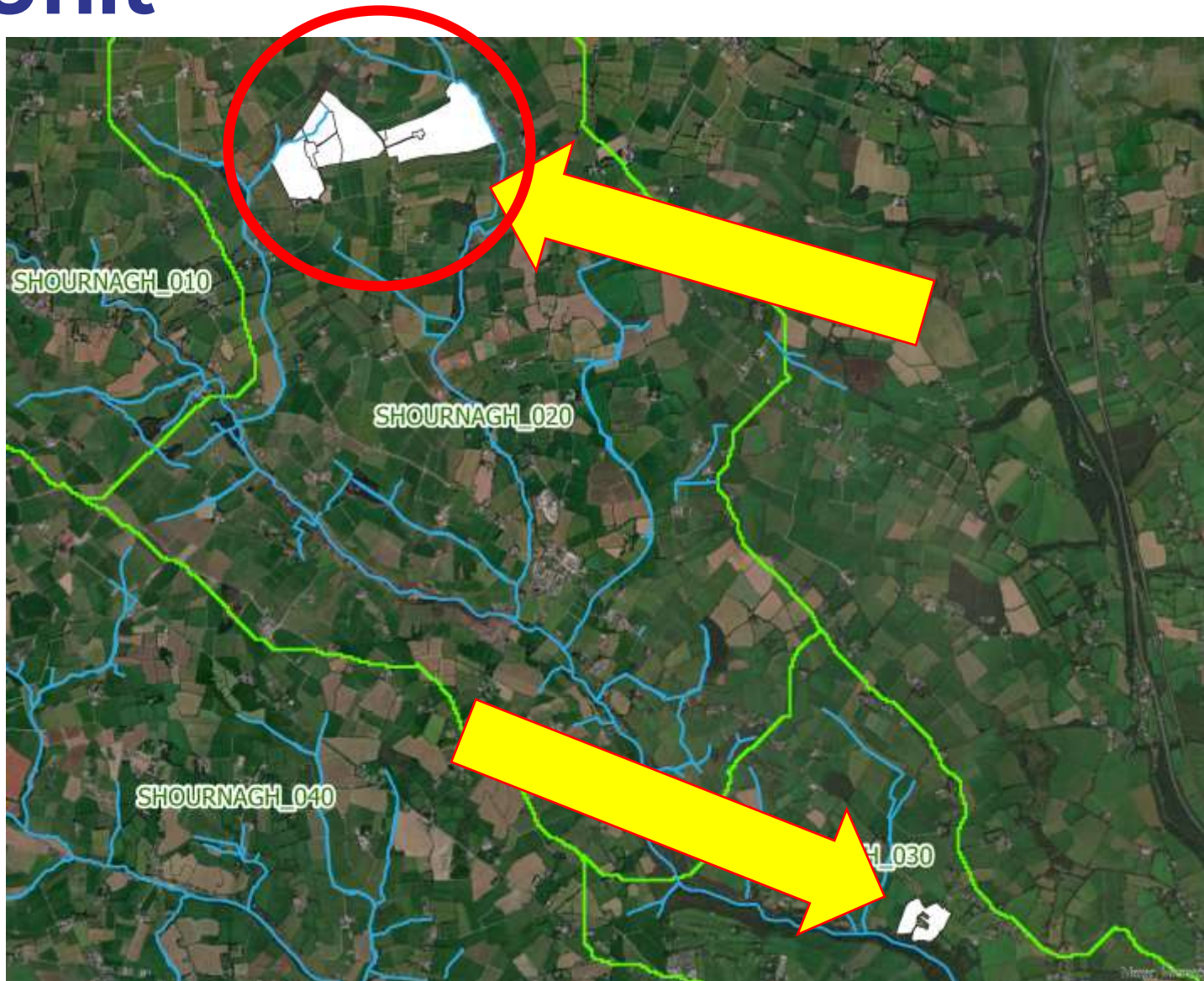


What we were tasked to do

- Find S-P-R and fund improvements.
- Ensure that the right action is funded in the right place.
- Integrate with Restore Project monitoring.
- Support existing best practices for water quality.
- Make it straightforward and ensure a consistent approach among all advisors.

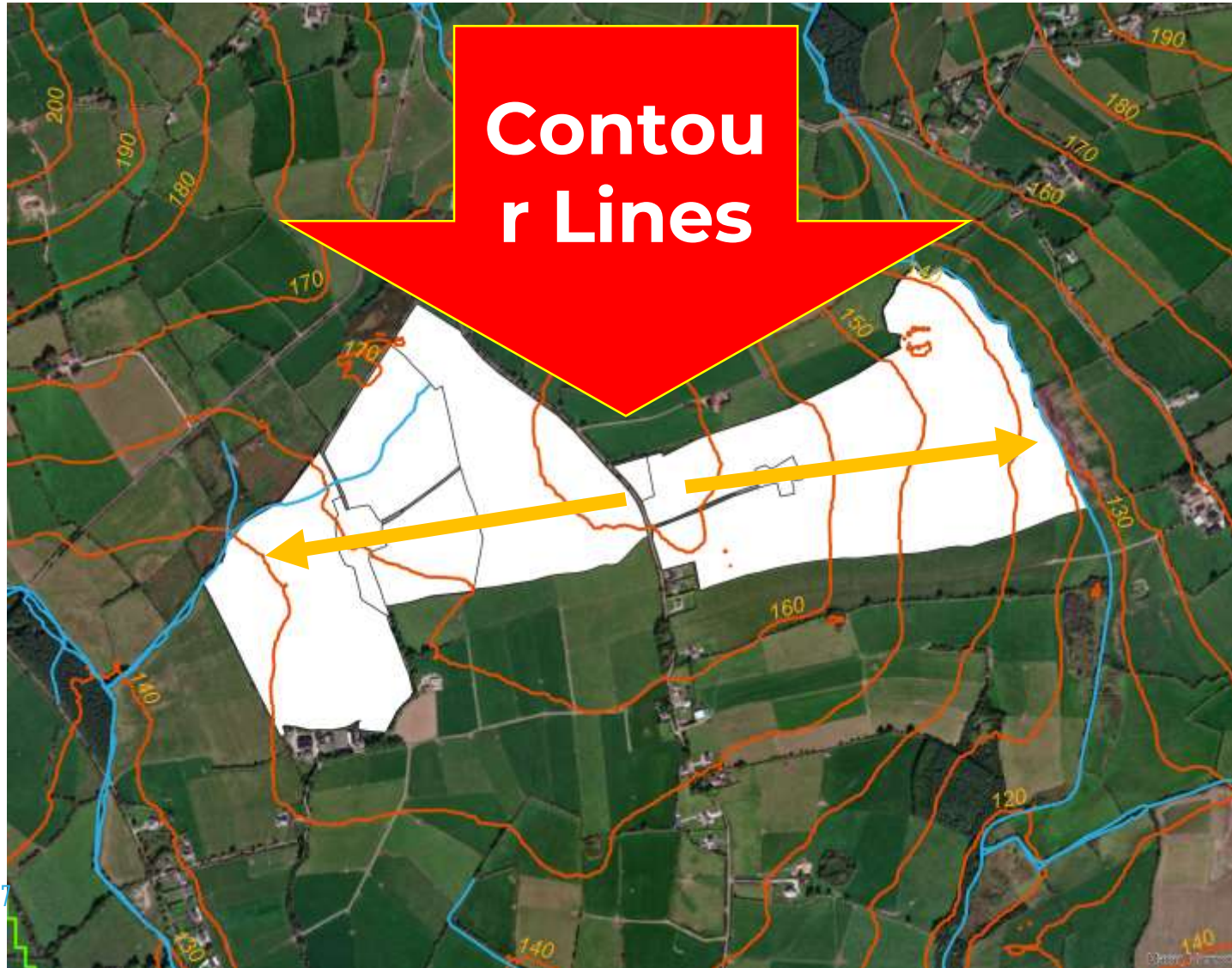


Our Approach: Example Farm Flow Unit



1. Keep to natural boundaries
- 2. Divide by Waterbody**
3. Divide by Restore monitoring point.
4. Flow pathways together.
5. Soil type

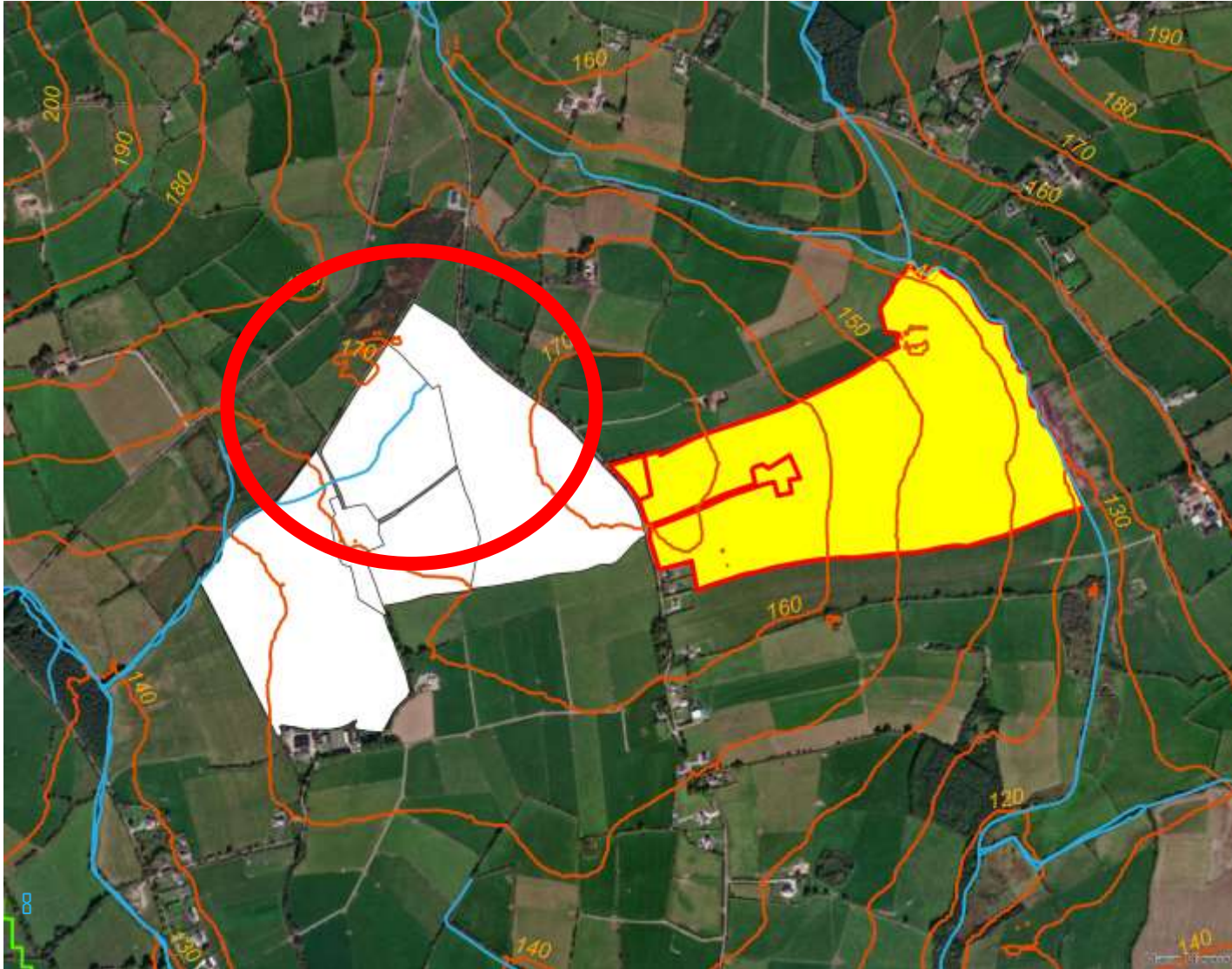
Example Farm Flow Units



Contour Lines

1. Keep to natural boundaries
2. Divide by Waterbody
- 3. Divide by Restore monitoring point.**
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Example Farm Flow Units



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Example Farm Flow Units



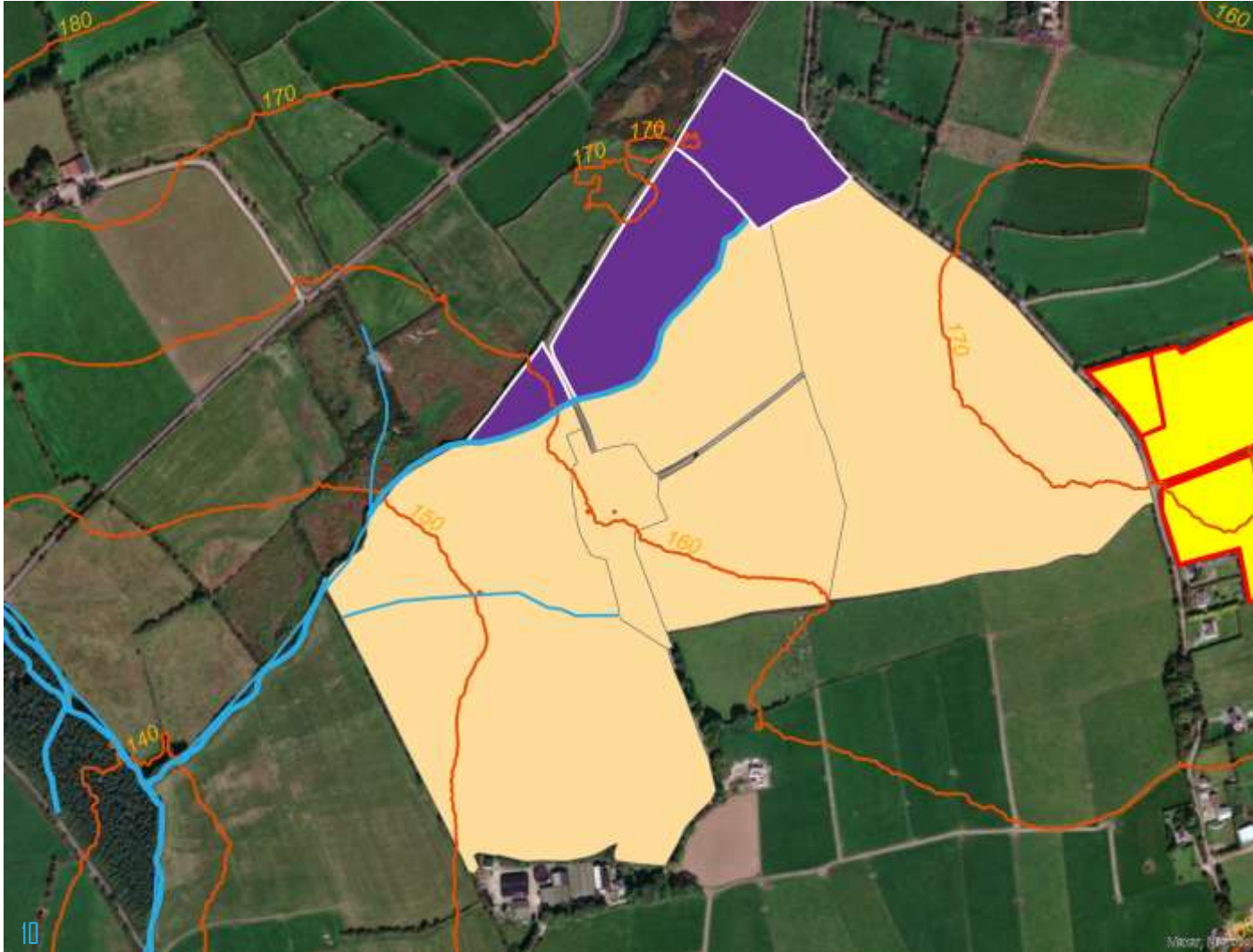
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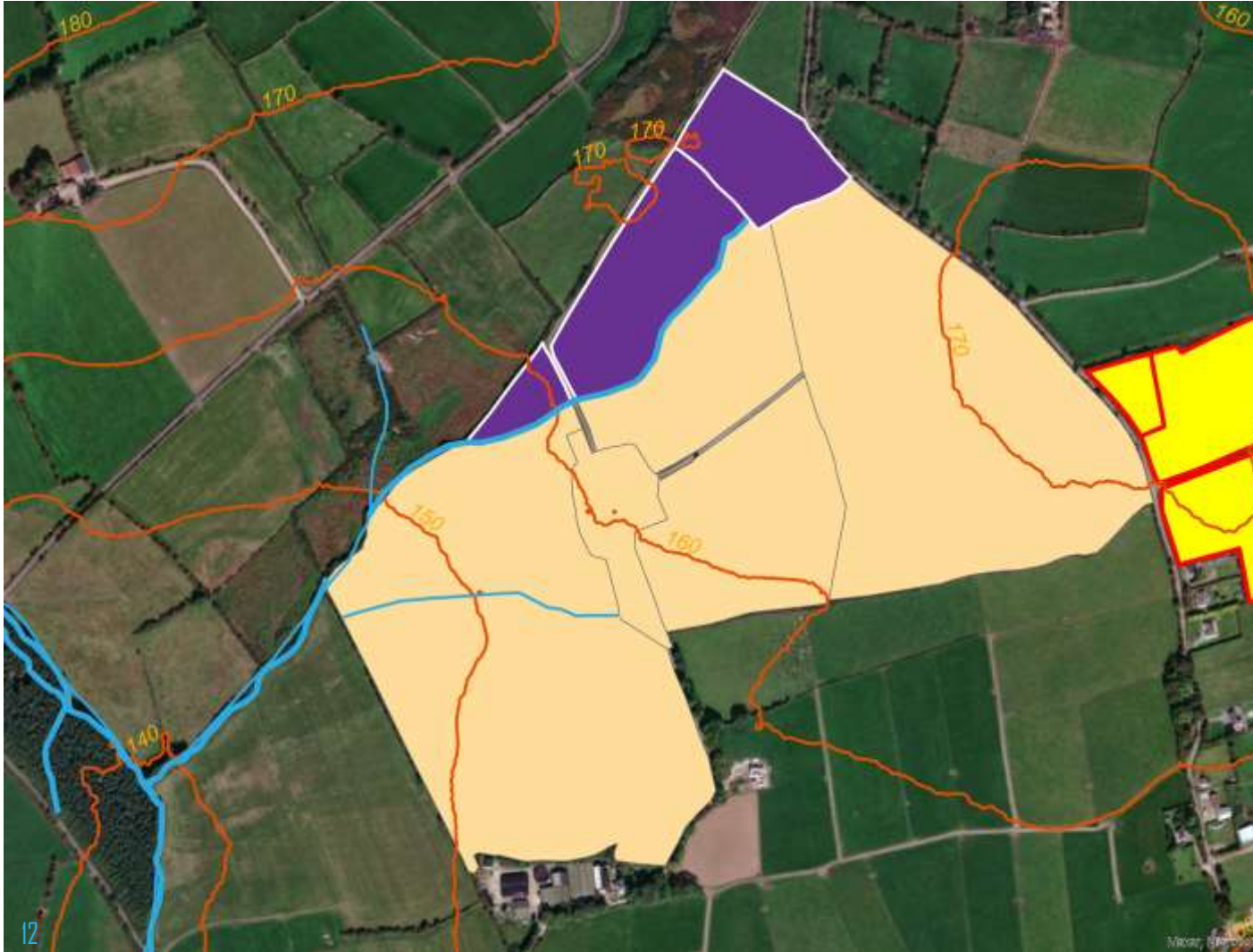


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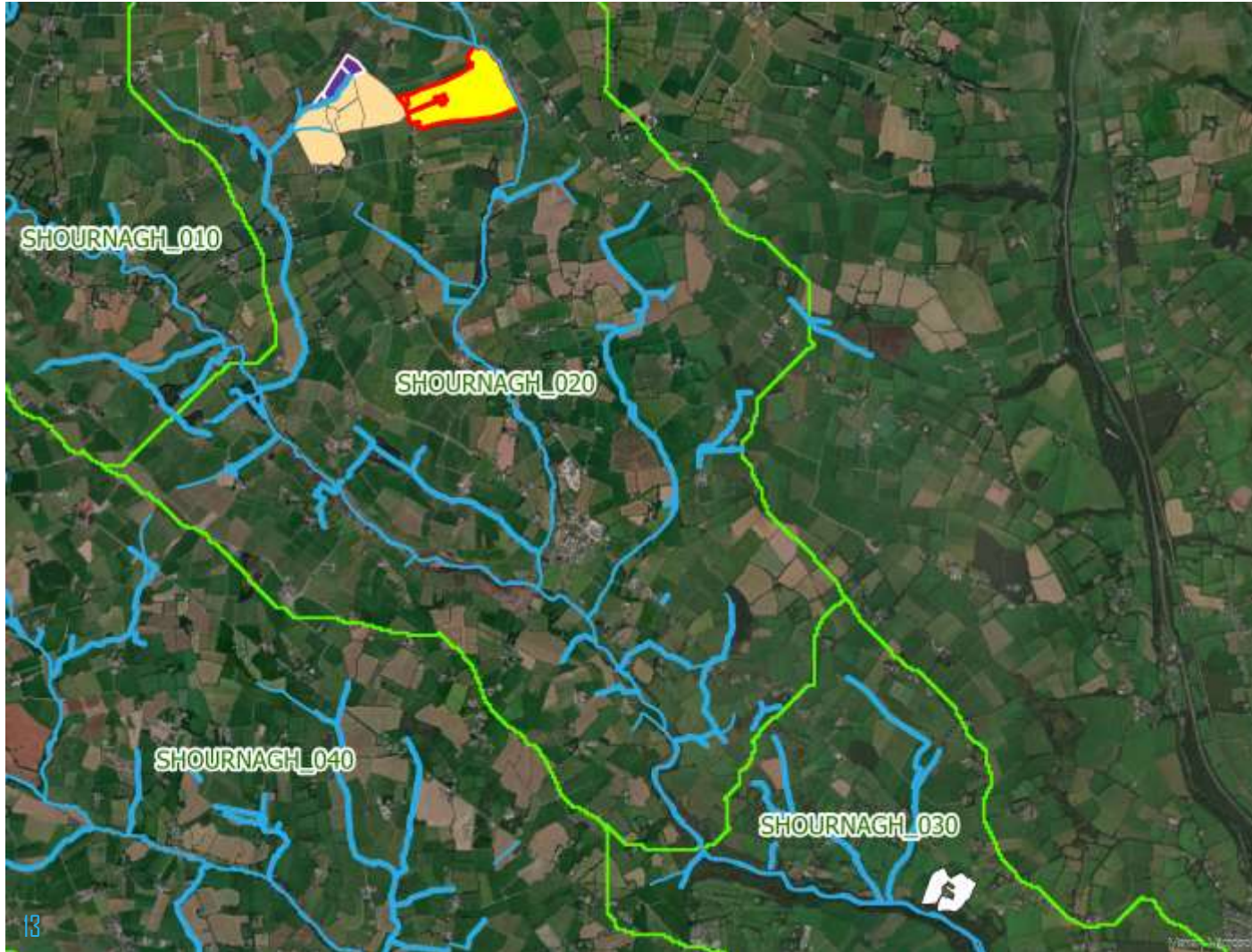


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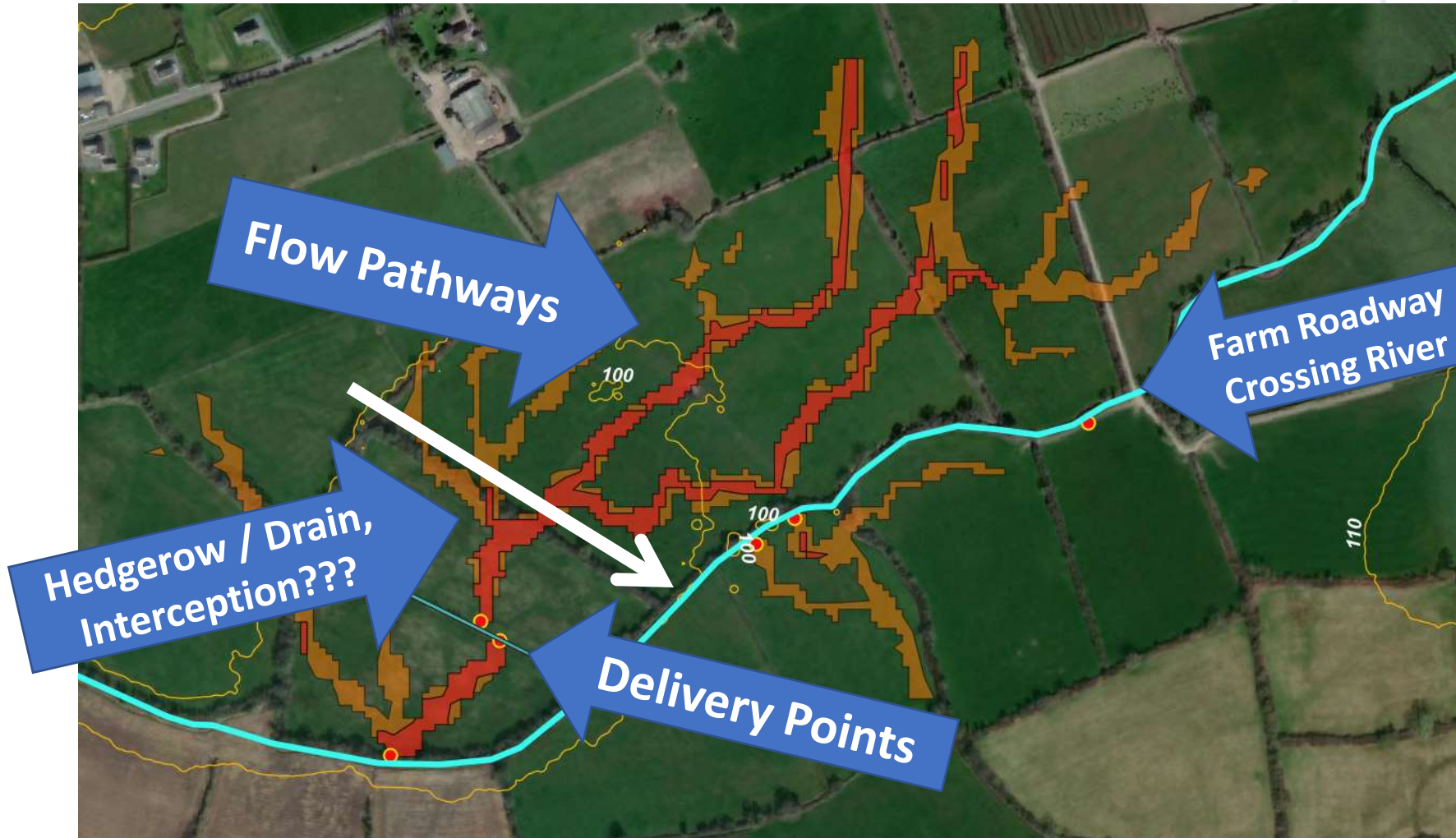


Example Farm Flow Units



1. Keep to natural boundaries
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Pre-assessment Desk Study: Finding Possible S-P-R



Max of 3 possible S-P-R will be highlighted for you.





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Flow Units Exercise

Divide farm in two; Give Reason:



1. Split farm in two Flow Units.
2. Find possible Source – Pathway – Receptor.

Flow Units Exercise

Divide farm in two; Give Reason: Heavy land along water course, Split by road.

There is a mix of different scenarios on handouts.

1. Split farm in two Flow Units.
2. Find possible Source – Pathway – Receptor.

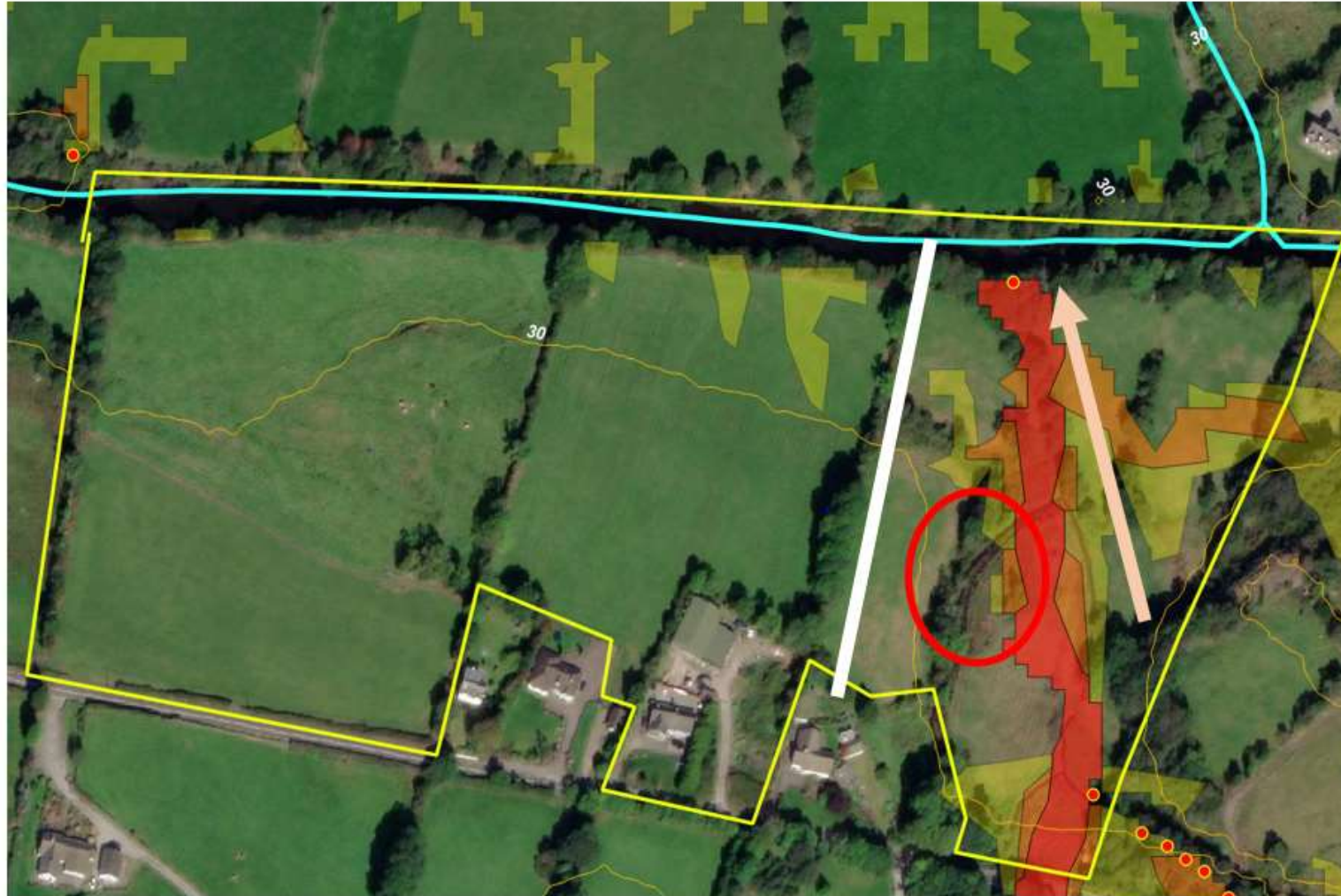
Divide farm in two and highlight possible S-P-R

Divide along hedgerow likely a drain is here to. This is to keep poorly draining land with flow pathway separate to be assessed individually from freely draining land. Possible S-P-R: Large flow pathway with delivery point to main river channel, farm land looks intensively managed, cut for silage possibly.



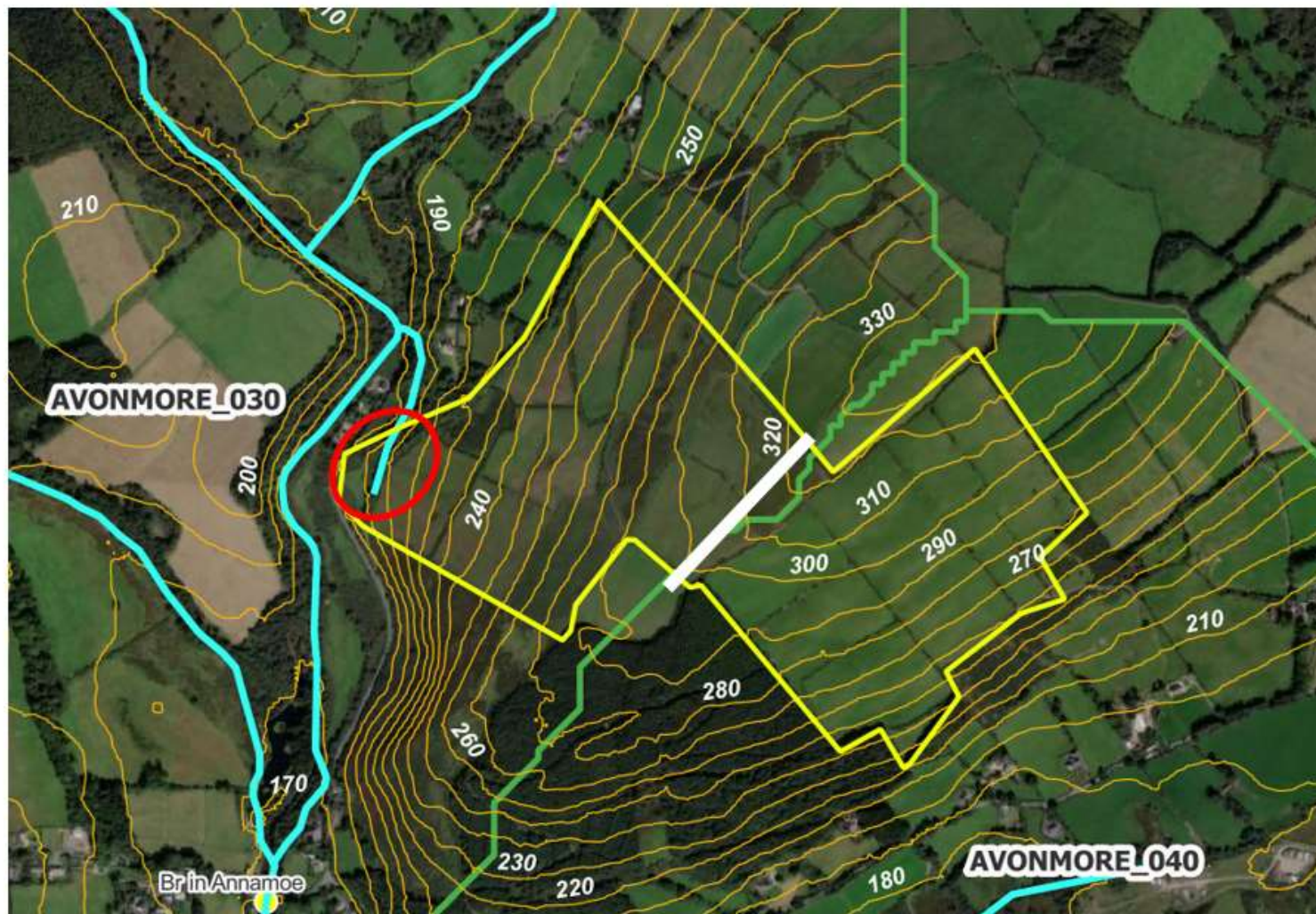
Divide farm in two and highlight possible S-P-R

Dive along hedgerow to keep flow pathway as one unit to be assessed by advisor. Possible S-P-R: Farm roadway on major flow pathway.



Divide farm in two and highlight possible S-P-R

Divide along hedgerow to split farm on waterbody boundary. Possible S-P-R: Spring on land, no sign of possible impact from satellite images.



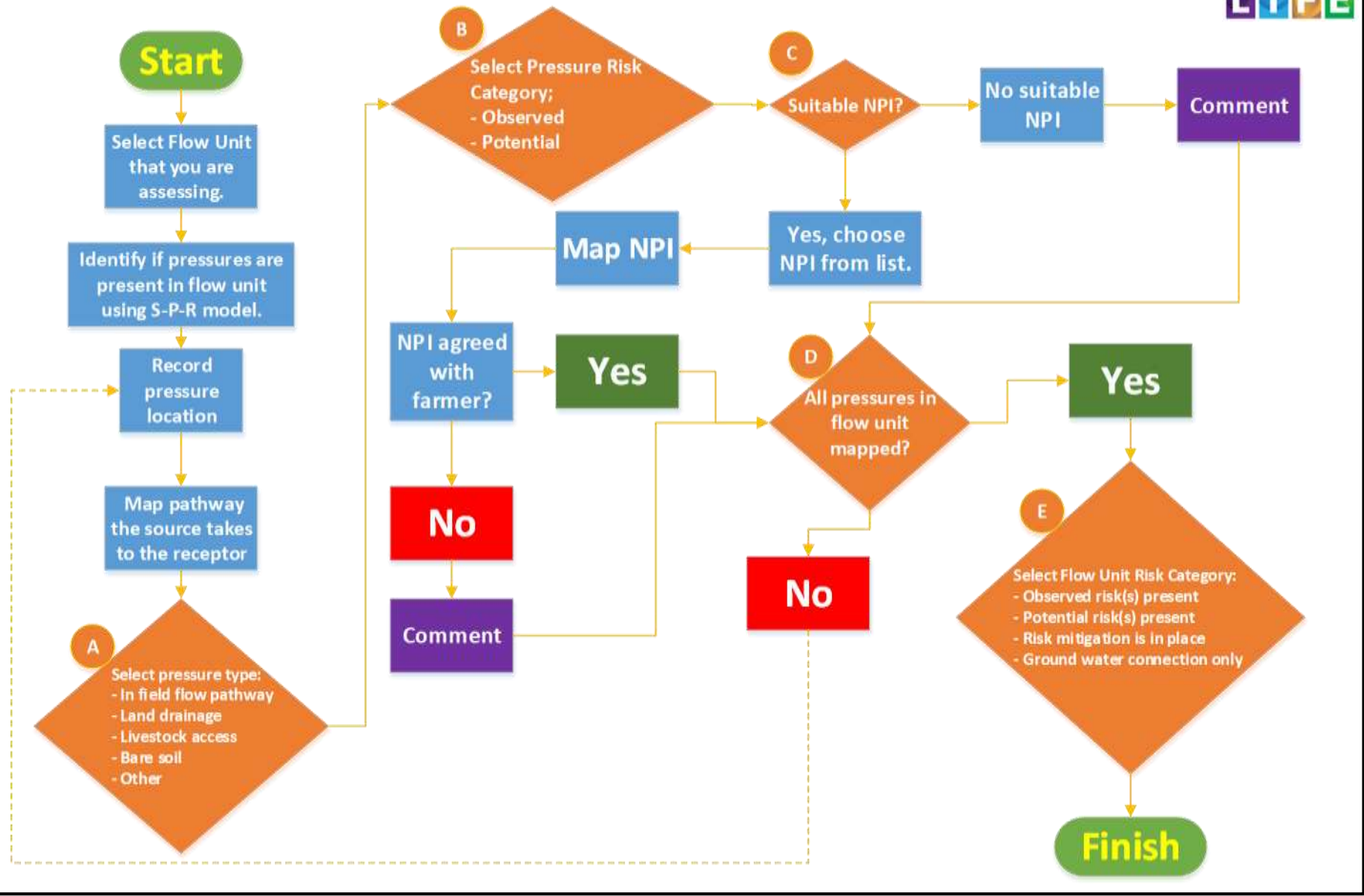
Farm Visit: Find S-P-R

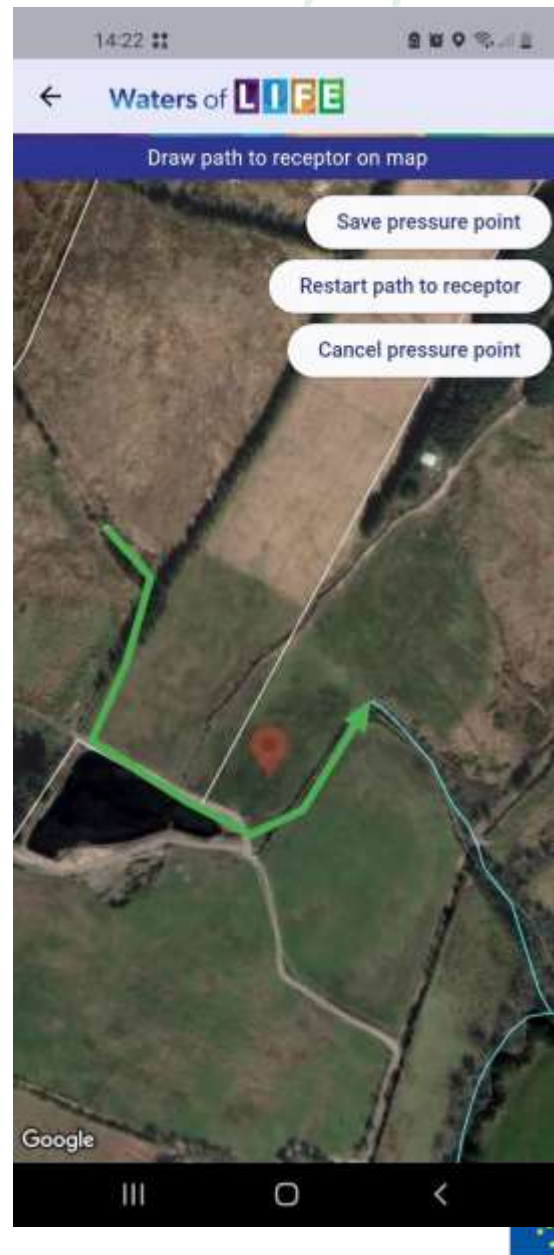
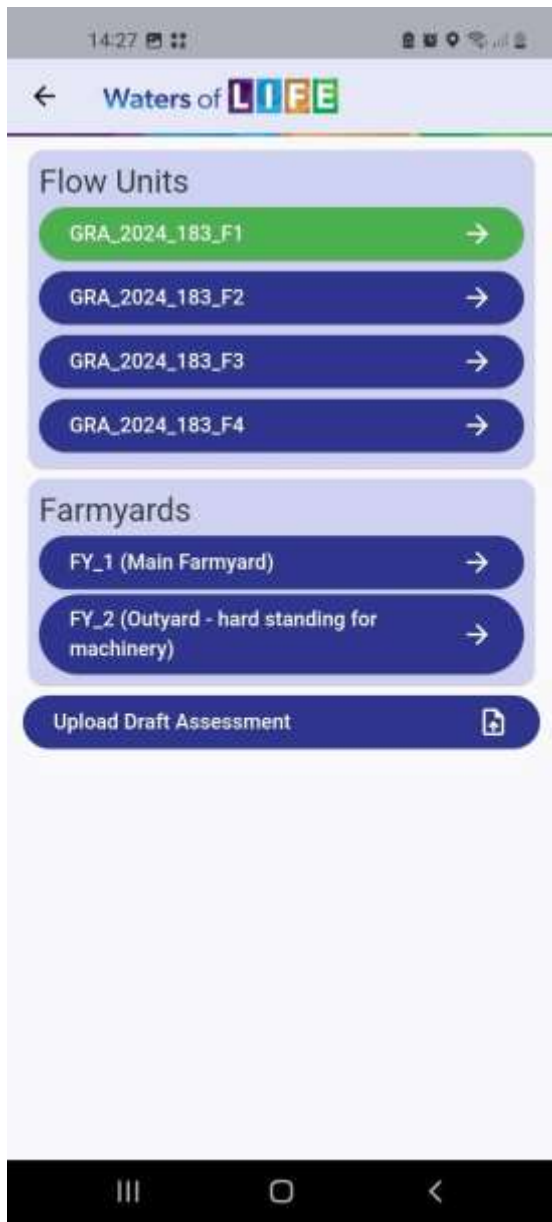
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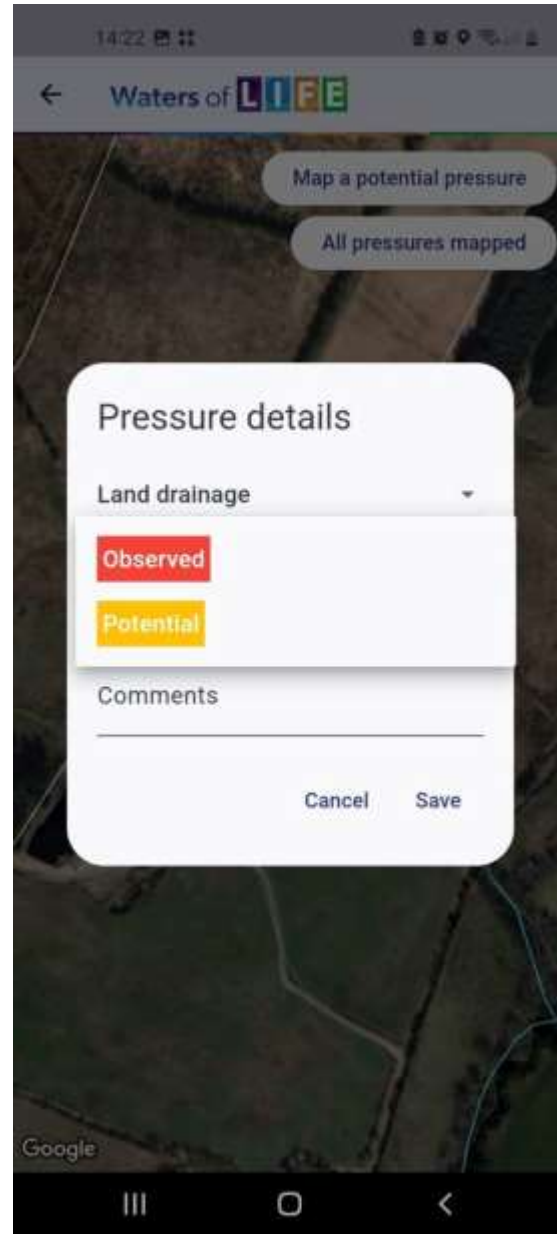




Runoff Risk App Flow Cart







Select Pressure Risk Category

Observed Risk	Potential Risk
<p>Clear Impact: major source + visible direct pathway present.</p>	<p>Likely Impact: minor source + impeded/direct pathway present OR possibility of future source + pathway occurring.</p>

Exercise: Select Pressure Risk Category

Observed Risk

Large network of land drains excavated with no mitigation actions in place. Sediment discharging directly into the main river channel.



Potential Risk

Gateway to paddock close to river bank, gateway is sloping towards the river. Small area of bare earth is visible currently. The farmer tells you that the gateway can get “Mucky” during the winter when he drives through it when feeding out silage.



Exercise: Select Pressure Risk Category

Choose either Observed Or Potential Risk Category and give reason for your answer.



+

Large area of bare soil, with runoff carrying sediment flowing into watercourse.

Risk Category: Observed / Potential

Reason:



Large poorly draining extensively grazed / low input field, steeply sloped to river, narrow buffer along river. Farmer plans to reseed field in future.

Risk Category: Observed / Potential

Reason:



A large area of bare soil beside a freely flowing farm drain, which discharges directly into the main river channel.

Risk Category: Observed / Potential

Reason:

Choose either Observed Or Potential Risk Category and give reason for your answer.



Small area of bare soil at gateway, 15 cows sometime stand here to wait to cross the road to be milked. Small discharge point to adjacent watercourse marked with arrow in the picture.

Risk Category: Observed / Potential

Reason:



A large area of heavily soiled farm roadway discarding directing into the farm draining network. 220 dairy cows walk on this part of the roadway twice a day, most days to get milk.

Risk Category: Observed / Potential

Reason:



Large network of land drains excavated with no mitigation actions in place. Sediment discharging directly into the main river channel.

Risk Category: Observed / Potential

Reason:

There is a mix of different scenarios on handouts.



Large poorly draining extensively grazed / low input field, steeply sloped to river, narrow buffer along river. Farmer plans to reseed field in future.

Select Risk Category: Observed / Potential

Reason: Field could be a source of sediment during reseeding event and after that subjected to higher P applications.



A large area of bare soil beside a freely flowing farm drain, which discharges directly into the main river channel.

Select Risk Category: Observed / Potential

Reason: large area of bare soil discharging into watercourse. Obvious impact



Google Street View

Small area of bare soil at gateway, 15 cows sometime stand here to wait to cross the road to be milked. Small discharge point to adjacent watercourse marked with arrow in the picture.

Select Risk Category: Observed / Potential

Reason: Small source of sediment / animal waste from livestock usage. Poor practice that could be improved.



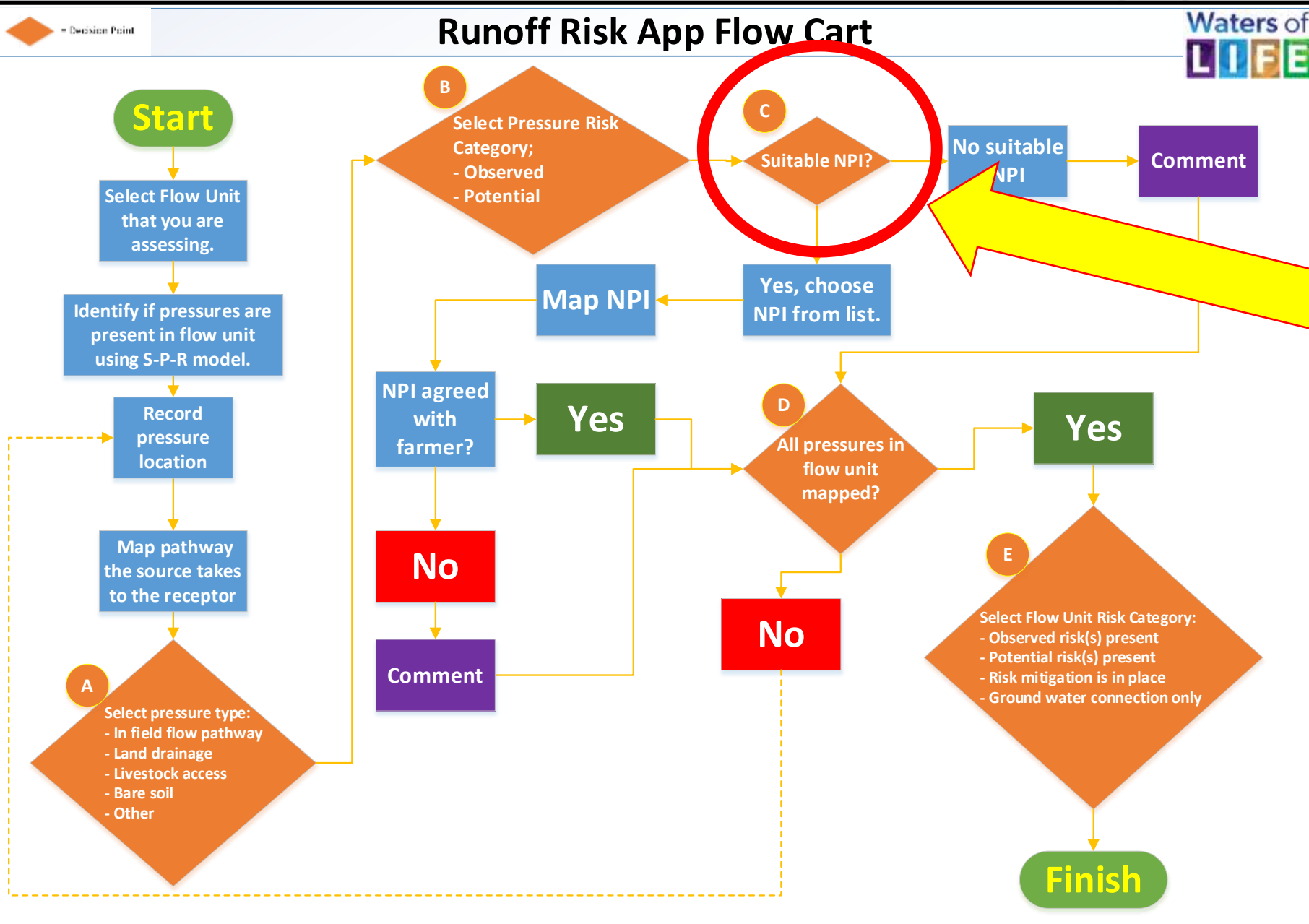
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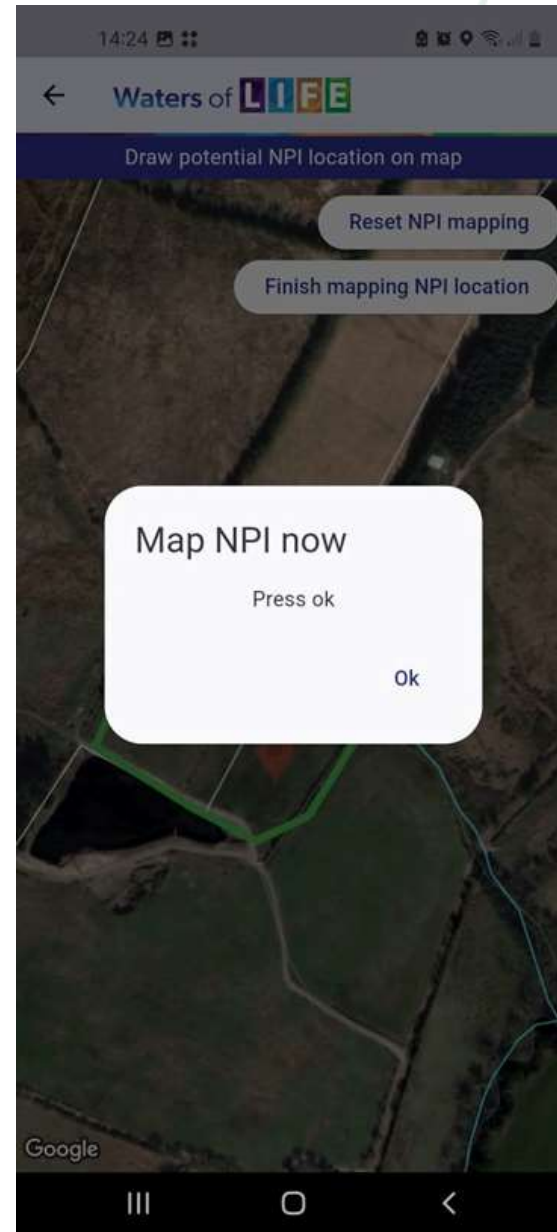
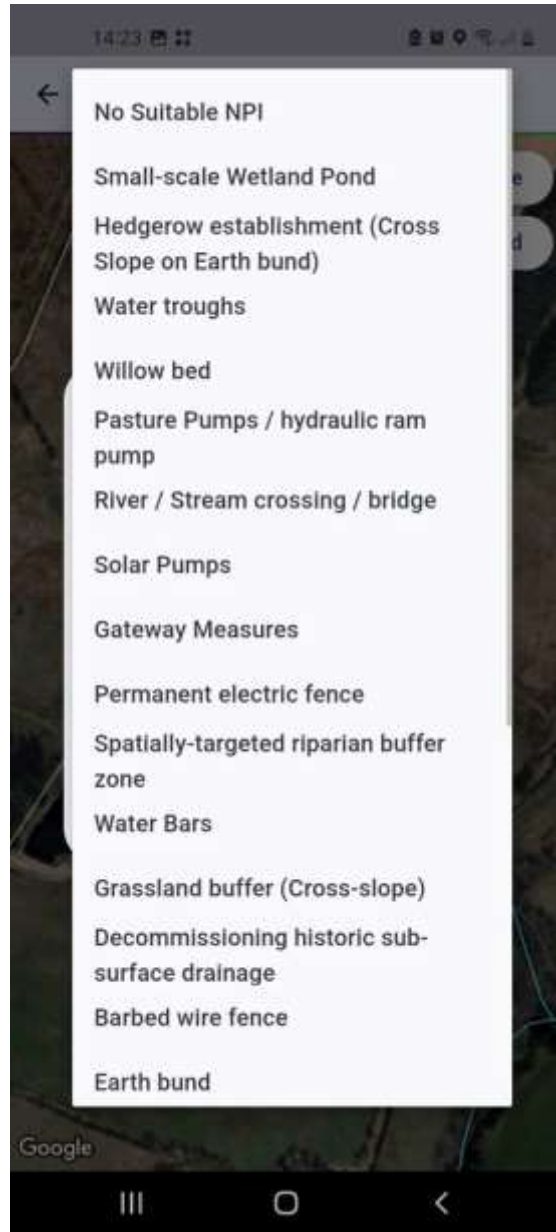
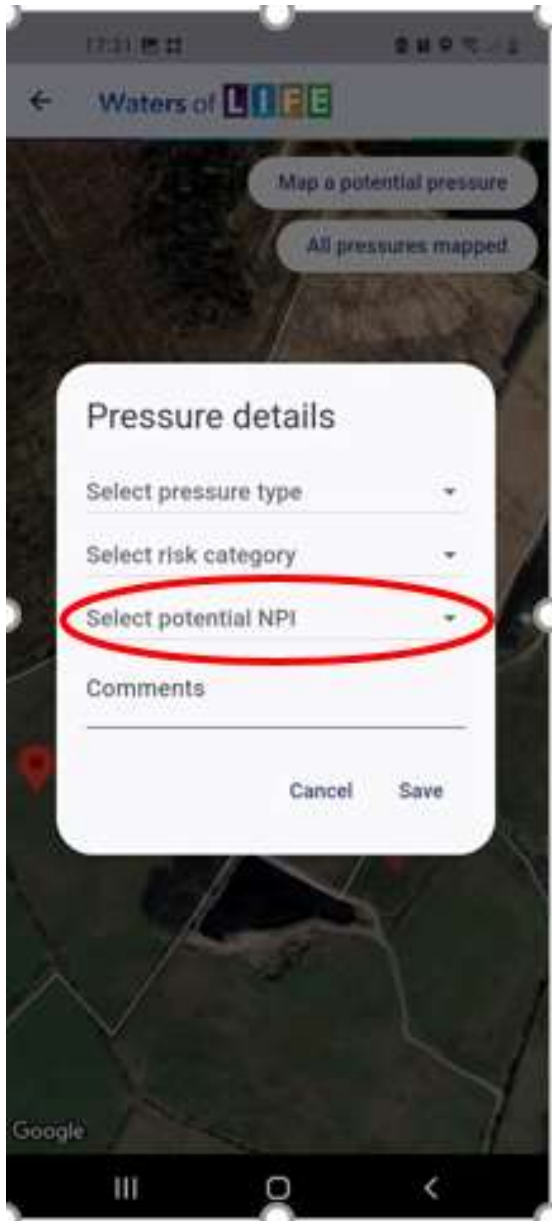
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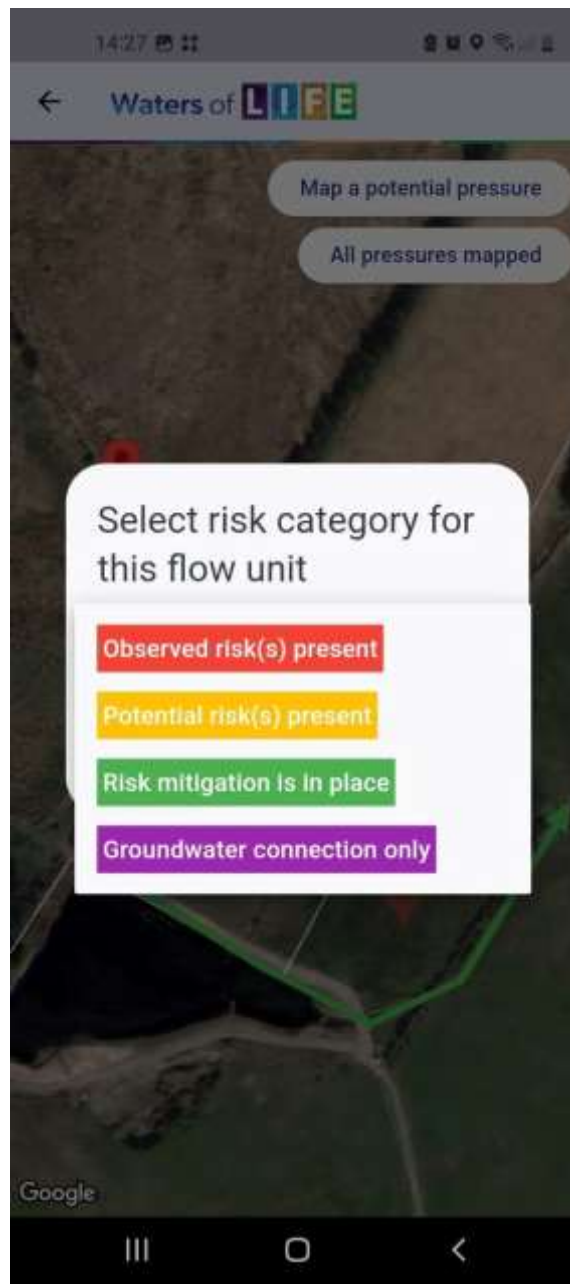
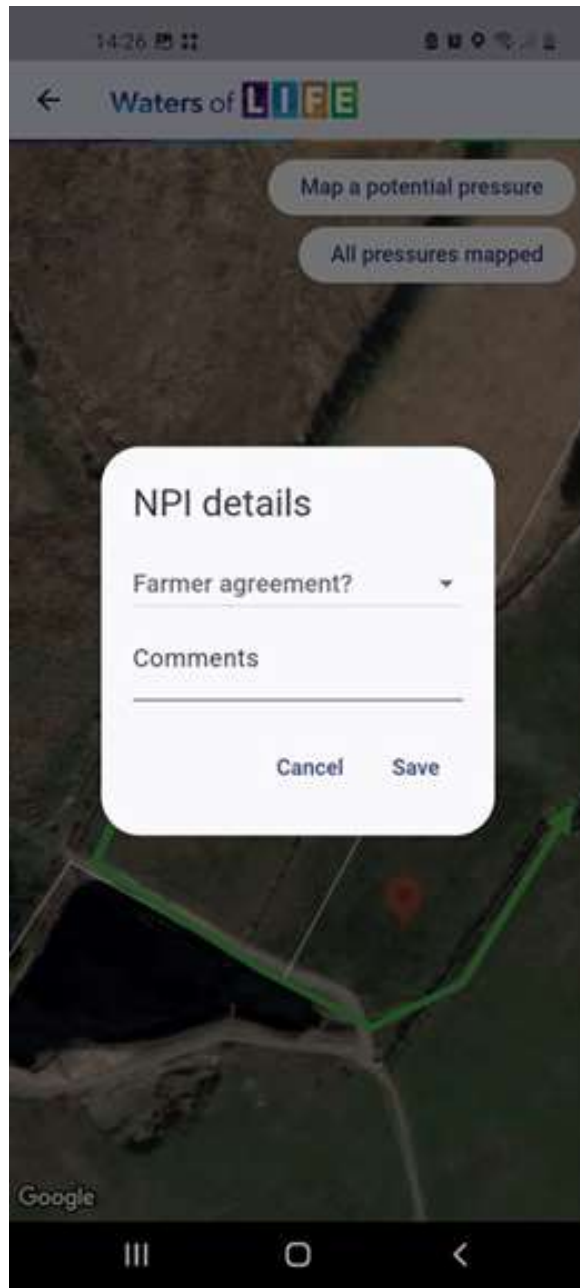
Select Risk Category: Observed / Potential

Reason: Large area of sediment and animal waste discharging into waterway, from a high amount of livestock.

Runoff Risk App Flow Cart







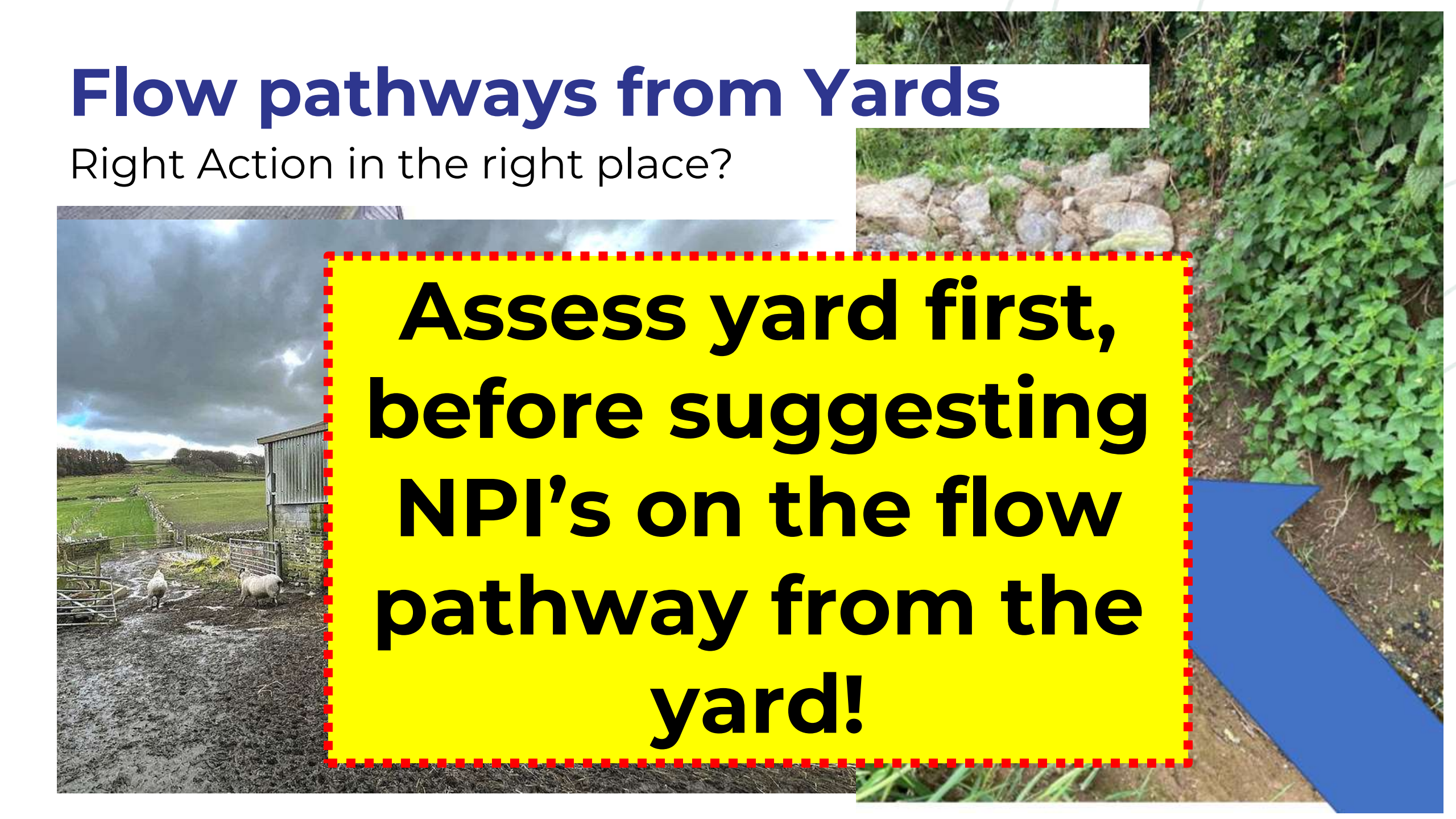
Flow pathways from Yards

Right Action in the right place?



Flow pathways from Yards

Right Action in the right place?



**Assess yard first,
before suggesting
NPI's on the flow
pathway from the
yard!**

Farmyard Assessment Process

N.B: Take your time to observe how the farmyard is used and how this might change through the seasons.

1. Identify if storm water enters the yard from upslope. **Redirect it to where it doesn't cause issues. Map in-flow pathway(s).**
2. Water from roofs of farm buildings. **Keep separate and use "Slow the flow" actions.**
3. Water runoff from clean yards (non-soiled) areas. **Keep separate and direct to Sediment trap / Bunded vegetated drain / Willow bed / Overland, away from a water course.**
4. Water runoff (not effluent/soiled material) from silage pits/slabs and under silage bale storage. **Keep separate and ensure no connection to groundwater, flow pathways or open water.**
5. Water that falls on soiled or potentially soiled areas. **Keep contained and reduce the size of these areas.** Where to look; footbaths, ensiling silage, where livestock stand/walk, fuel storage, chemical storage, livestock/machinery enter and exit routes, livestock handling facilities, dung stead.
6. Sheep dippers. **Keep contents contained and keep sheep separated from watercourses until fully dry.** Look out for: where sheep stand after being dipped assess if runoff is contained, do sheep get long enough to stand there to become drip dry? Are the exit routes of the sheep dipping facility close to a waterway? Where are sheep directed to after being dipped, to which fields, ensure no access to watercourses. What is the spent dip disposal procedure?
7. Identify where water leaves the yard. Look out for gully drains in the farmyard and where they drain towards. **Map out-flow pathway(s) and assign if either, Into water network / Overland flow / Into ground water.**

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Follow on Supports



- Desktop study online tutorial.
- Full app online tutorial.
- Guidance document.
- Waters of LIFE team.



Key Takeaway



- 10 minutes of prep on the desktop study saves an hour in the field.
- Ask the farmer.